'Compulsory creativity': rationales, recipes, and results in the placement of mandatory creative endeavour in a medical undergraduate curriculum

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Since 2004, medical students at the University of Bristol have been required as part of their core curriculum to submit creative works for assessment. This requirement, which we term, ironically, compulsory creativity, may be unique within medical education where arts-based modules are typically elective. Such courses often harness the insights of established artists and writers in the illumination of medical themes. Less commonly students are called upon to link their own creative work with clinical and other life experience. Occasions for students to develop such an interpretative voice are generally sparse but the benefits can be argued theoretically and practically. In this paper we explore the rationale for the inclusion of such opportunities, the ways in which we have woven creativity into the curriculum and the sorts of artistic outputs we have witnessed. Contextualised links to a wide range of original student works from the www.outofourheads.net website are provided, as is a range of student reflection on the creative process ranging from the bemused to the ecstatic. The paper provides a model and a guide for educationalists interested in developing artistic creativity within the medical curriculum.

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that year. A lot of murmuring, some paper throwing, a general air of mutinous inattention that threatened to seep downhill and poison any tender shoots of understanding emerging on the lower slopes. Fixing the full attention of 250 first-year medical students is not easy. The back of the modern lecture hall is a long way back. That's from where Richard stood up and ambled down the aisle to the lectern, accompanied by clapping, stamping, and whistling. One of the lads. It was the final plenary session of a first-year course and a clutch of lionhearted students were sharing their creative work with the raucous assembly.

Richard went on to read a simple, short, and beautiful poem that told of his love for his sister and how that was changing as he grew up and away (see Box 1). His artistry and emotional honesty transfixed the theatre. For an aeonic three seconds there was silence and then genuine, delighted, applause. Richard from the back row had

taken a risk, articulated feelings, confounded a stereotype, and created a decent poem.

In the Bristol University Medical School we offer several opportunities for such creative endeavour. In this paper, we explain why creative work may be important in medical education, how it may be drawn into the curriculum, the sorts of artistry that students display, and their response to our artistic expectations – especially when these are mandatory rather than, as is usually the case with art, elective.

The impulse to bring creativity to the medical curriculum is underpinned by the emergence of Medical Humanities as a wider educational theme. We remain convinced by Macnaughton's rationale that the good doctor is one who can synthesise the technical and the humane (1). The humanities, contributing royally to the formation of the humane, gain their place at the table through their contribution to the *education*, as opposed to simply the *training*, of doctors. However, we acknowledge this is a reasoned rather than empirical position.

Box 1. Distance by Richard Jones

Distance

She awakes innocently from her peaceful sleep and as she peers trustingly into my eyes I feel the wholeness of a sibling's love. So many words cannot define the desire to fulfil the delicate role of brotherhood for now that I am here I fear she will not know me. And as she blossoms out of childhood the years we shared may drift afar becoming a mere faintful picture.

Richard Jones

From it, we have in Bristol University pioneered, through an intercalated undergraduate degree programme, a rigorous intellectual approach. This focuses on the literature, philosophy, and history of medicine and is taught by academics from the Arts Faculty with research interests in the field. The value, for instance, of literature in a medical education has been well argued (2, 3). Charon has contributed saliently with the concept of 'narrative competence' derived through guided closereading of text (4). These endeavours privilege students' academic skills, albeit in a more diverse intellectual landscape. Academic ability, in particular the ability to retain propositional knowledge (facts) and, to a lesser extent, the ability to reason, forms the basis of selection and progression at medical school. It is now widely acknowledged by theorists that there are many facets to ability, and authors such as Ken Robinson argue that education, by its focus on the academic, has substantively failed to realise its potential (5). Of the other species of intelligence, the concept of emotional intelligence, the ability to recognise, harness, and transform emotional states while being aware and responsive towards the emotional needs of others, has face validity in the medical context (6).

An urge to a broader curriculum stems from our discomfort with medical training that is overly technical when the practice of medicine is self-evidently one that involves direct engagement with the sick person (7). The quality of that engagement will influence the outcome of the person's care but can be hampered by poor interpersonal skills, lack of cultural awareness, deficient moral

imagination, and declining empathy through the curriculum years (8). Training in communication skills and medical ethics is now a curricular norm column and the need for 'cultural competence' is emerging (9, 10). In this paper, we describe creative endeavour as another approach to the attempted formation of the well-rounded, emotionally intelligent, practitioner. Firstly, we tackle the untacklable – the nature of creativity itself.

Creativity, the concept

It is refreshingly difficult to find an uncontested definition of creativity. As an abstract noun it is a late arrival (1875) into the *Oxford English Dictionary*, perhaps because up until the Enlightenment it was only the *Creator* who created the entirely new (11). For the surgeon Gauderer it is 'the power to create or produce something *useful* that *has not previously existed*' (his emphasis) (12). As might be forgiven of an inventive surgeon, his notion of creativity is utilitarian and could be confused with that of *innovation*, which requires the novel idea to be converted into some thing or process of practical worth.

In the arts world, creativity is valued as an end in itself without an expectation of *use*, unless that use might include the ability to move those who experience it. An element of novelty is common to all definitions. For instance, for the Nobel Laureate physiologist Albert Szent-Gyorgyi, it 'consists in seeing what everybody else has seen and thinking what no one else has thought'. This is true whether the creative act is technical, theoretical, or artistic. The place of the imagination in scientific innovation is underplayed but considerable (13).

Philosophers and psychologists have debated whether the creative processes of great minds are or are not of the same type as 'common' creativity, and the modern view is that they are the same only pursued with uncommon energy (14). The measurement of creativity is difficult and its quantification impossible. Creativity is a higher human function and tends to flourish when basic material and security needs have been met and people can afford to be open-minded and tolerate uncertainty. An assessment-driven and fact-based curriculum is not, therefore, the ideal soil in which creativity might flourish.

Creativity in medical education

There are a great number of artistic and creative doctors (as seen by the extent of organised art societies, exhibitions, concerts, and literary publications by doctors) (15). We have also witnessed a growing number of medical humanities courses across the globe, where students engage with poetry, prose, and painting by established artists. However, creative *expression* as a formal part of undergraduate medical education is a newer development within the field. In a new medical school in Nepal, students are asked to creatively respond to paintings

through reciting/singing a song or a poem about the scene or producing a short role-play (16). Shapiro et al. (17) has described how medical students in her institution have the option of using 'any artistic medium to reflect on some aspect of their experience in anatomy'. Shapiro (18) also notes in the introduction to her book exploring medical student poetry that many of the 129 medical schools in America 'self-publish literary/arts journals containing original creative work of medical students ...'. How much of this work is produced within the formal medical education context is not clear. Closer to home there is a 'creative communication' course at Brighton and Sussex Medical School, which engages students in 'performance and installation art' to communicate issues around medical practice (19).

The literature, however, remains sparse in exploring the idea of medical students engaging in compulsory creativity or linking creative-reflective work with clinical placements. We believe such practice is of benefit and can be reasoned in various ways (20). In a factual-based curriculum, there is often little space or opportunity for students to develop their own interpretive voice, described by Haidet (21) as comparable to jazz musicians finding their improvisational voice. For example, how did the student interpret a patient's narrative, what issues, dilemmas, or questions (personal as well as professional) were brought up during a consultation? Having an opportunity to conceptualise and express an experience using novel means such as art, poetry, or music allows students to explore and consider an experience in dimensions other than that of the formal medical history. This looking with the eye of the artist can help the student develop their sensory acuity and empathy for the patients' lived experience. It seems to open up the reflective space, for example, by stepping into another's shoes and attempting to view the world from another's position. Facilitating deep student reflection can be challenging (22), yet in our experience the quality and depth of reflection associated with creative pieces is often astounding and may contribute to the development of 'moral imagination' as mentioned above.

Deepening students' reflective capacities should also enhance their ability to learn from their experiences (experiential learning, as per Kolb's learning cycle (23)). Depth of learning has been classified on a five-point scale from superficial (noticing) to deep (transformative learning) (24). Transformative learning, the development of more integrative and inclusive beliefs (24) through attitudinal and perspective shifts may be enhanced by the 'creative leap' because creativity opens the door to engagement of the whole person, not just intellectually but also emotionally (25).

In terms of their future career as doctors, creative development may enhance their professional practice. Students will, for example, be engaging with complexity and uncertainty, facing new problems never encountered before, making sense of patient narratives and explaining diagnoses or lack of them, hopefully in ways that are useful to patients. Schon (26) terms this side of professional practice, 'professional artistry', i.e., managing 'situations of uncertainty, instability, uniqueness, and conflict'. He contends that professional education in general focuses too heavily on an epistemology based on 'technical rationality', whereby students are taught how to solve 'manageable problems with predetermined rigorous rules'. Lippell (27) applies this directly to medicine, highlighting the problem of the 'predominant convergent personalities of medical graduates, and to the declining numbers of creative and original divergent personalities'.

Further reasons for creative engagement within the medical curriculum include the therapeutic value of writing about difficult experiences, of value to future doctors and also their patients. Like other educators in the field (28), we have discovered that sharing creative work may enhance and deepen interaction with their peers. Then there is the potential enjoyment of being creative and the boost this can be to self-esteem. Students who have experienced these benefits personally may encourage patients to engage in similar pursuits. Art is also a safe means by which students can offer their critical insights into the system.

Though we don't teach creativity, we certainly need it. Lord Darzi argues passionately for innovation in the UK NHS (29), but the learning of medicine remains focused on the acquisition of knowledge and skills (though many are, of course, creatively engaged outside the curriculum). Similar laments are to be heard in the biosciences (30). Though the creativity we have explored in Bristol is artistic rather than technical, we believe that the benefits from one creative domain are transferable to others.

Placing creativity in the curriculum

Because creative work is not part of students' expectations of medical school, careful attention must be brought to creating a clear, upbeat, and non-threatening context. There are three occasions in the Bristol curriculum where all students have the opportunity to work creatively. In one of these, each student, in a year group of 250, is required to produce an original work of art. To our knowledge, this is the only example of 'compulsory creativity' in UK medical education, therefore we describe it here in more detail.

The setting is a short course entitled 'Whole Person Care' which runs for one afternoon per week for four consecutive weeks and which sits in the second term in their first year of studies and comprises sessions in the philosophy of holism, the therapeutic consultation, the mind-body connection, and whole person care in practice. In the second week, some senior medical student

colleagues stage a play called Cancer Tales by Nell Dunn (31). This is a powerful dramatisation of the playwright's interviews with women living (and in some cases dying) with cancer. Though at times perhaps too powerful, it serves to draw these young people into the irksome world of patients' inner experiences and the, perhaps to them insurmountable, challenges of getting it right as a doctor.

Students then disseminate into tutorial groups of 10–14 students to discuss Cancer Tales and some other selected art works including a painting by Michele Petrone and the poem 'Visiting Hour' by Stewart Conn (32). Their approach to these is often vigorous, setting them up well for an exercise in 'free writing'. In this we follow almost prescriptively the advice of Dr Gillie Bolton (33). We suggest themes including 'the patient', 'a meeting that made a difference', and 'touching patients'. Since their clinical experience is limited, we actively encourage them to draw on personal and family experience. The free writing is just what it says, writing freely without undue concern for style, form, or punctuation. We encourage the exploration of sensations and feelings and the sharing of what they wish of this embryonic work in pairs.

The following week, students are asked to submit a completed work for assessment. This may be written but all media are accepted, and we have received paintings, drawings, cartoons, songs, mimes, dances, embroidery, and sculpture. The work may or may not derive from seeds sown in the free writing. Each must be accompanied by a short piece of prose reflecting on the context for the work and the process of its creation. Tutors respond in writing, and in the fourth and final week, creative work may be shared within the group. Some, like Richard's, are performed at a final plenary session.

Another undergraduate-related course offers creativity as an option. Sixty percent of first year students chose the option to submit a creative reflection instead of a formal case report at the end of a short Primary Care attachment in 2008 (34). In the fourth year again, students are asked to reflect creatively on a case from their main Primary Care attachment. Because of the poignancy of the personal and clinical situations they report and the wonderful artistry exhibited in some of the work, we decided it deserved a wider forum. We have since created an on-line exhibition that can be viewed at www.outo fourheads.net. The story of the creation of this website is included in an accompanying paper, 'Out of Our Heads! Four perspectives on the curation of an on-line exhibition of medically themed artwork by UK medical undergraduates' (35).

Themes in medical student creativity

The on-line exhibition is designed around themes that the students present in their creative work. There are four broad categories at the heart of the website. Artworks can be accessed via the following hypertexts. The first year students (like the example in Box 1) often dealt with things in relation to what we term the 'home front'. This reflects the relative proximity of life at home and their relative lack of clinical experience. Topics include sibling love, siblings lost, ageing grandparents and ill parents or parental love gone wrong or gone to drink. Some write in the language of home. They also share their personal experiences of physical and mental ill health.

Clinical experience is the main overarching theme and works cover a wide range of topics. Students rail against perceived hypocrisy, appreciate colleagues from other disciplines, celebrate the fortitude of the infirm, and describe memorable home visits. They tell us about their first independent professional relationships and the delight and difficulties they bring. They deal with patients' identity in the abstract and in the system and share how their own nascent professional identities grow and conflict.

The collection, called 'Doors of Perception', contains examples of vigorous flexing of the imaginal muscle: patients in the foetal position in the waiting room; visualisation of trigeminal neuralgia; Haikus on depression; the search for hope in extreme adversity; the knot as a metaphor of extreme complexity; imagined conversations between a wife and dying husband; a depiction of hemianopia; the meditations of a person facing death.

The creative process

In reflective accounts, that accompany the submitted artwork, students are asked to give context to their creative pieces and say something about the process of creating it. These accounts often add information that transforms our appreciation of the more artistically naïve work by explaining the situation that the art pieces strive to convey (i.e., the poignant 'Termination' by Andrea Brown). Not all students take up this opportunity. However where students have reflected on the process it has provided us with invaluable insight.

The following examples, while not drawn from a formal analysis, offer, we hope, a balanced spectrum of responses to our demand for 'compulsory creativity'. Several hundred accounts can be viewed directly on the website.

Many sense that they lack creative skills and so enter the sessions with negative expectations. The 'free writing' seems to work for many students in unlocking their expressive potential:

Even though they'd said we could write anything, I couldn't think of anything to write. I could hear everyone else's pens scribbling down notes and was thinking – how are they doing this so quickly? ... Once I got the first few lines down it seemed to flow and I couldn't hear those pens anymore. Going from nothing to all these ideas and emotions at once was strange, and I was writing quickly so I wouldn't forget them.

This student has experienced the wonder of creative absorption. Another student notes that:

Creating art is refreshing for the mind. Writing poems or prose, painting and playing music all have the same effect. While creating art, your mind is keenly focused on the process of creation and on nothing else.

Art is not just a record of experience, it delves towards some deeper understanding often in the form of metaphor. Elfieda Power's 'Knot' consists of a tangle of coloured lines representing the doctor, patient, and community. She comments:

The creative process allowed me to project my feelings about meeting this patient into painting, allowing me to understand why I felt the way I did and not feel so frustrated about it.

This process, which draws on unexpected reservoirs of experience and imagination, is radically different from students' usual experience in the medical course, which is mainly concerned with the acquisition of pre-existing knowledge. Many students reflected on this distinction:

Really frustrating; all the words I wanted weren't there. I blame medicine! Too much science and not enough reading have devastated my vocabulary. I find it quite scary that I have become so used to the way of thinking that our medical course has so far required and think that I'm going to have to work a bit harder to let my creative side come out.

Another tension is between the realities of emotional lives in conflict with societal expectations of the doctor (see, i.e., David). Remen argues that 'physicians are trained to deny their wholeness in the mistaken belief that this would enable them to be a service to others' (36). Through creative media, students can find safe means to try and embrace these internal contradictions:

This process has helped me to realize that it is possible to have conflicting emotions and this is not necessarily a negative thing. Hopefully my medical training will naturally help me to discover the true balance between emotional involvement and detachment.

Sometimes the issue is an emotion that feels out of place. Sometimes an emotion is not there that maybe should be present (e.g., This is Your Grandad). Research consistently shows that medical student empathy reduces during their clinical training and students express this fear:

I have been able to conclude from this exercise that perhaps my greatest fear is, and should be, to loose the initial emotional reaction by becoming unaffected by such unusual sights and situations.

We think that the potential of creative work to integrate the emotional and the clinical is a good thing, but some students resented this attempt to bring the artistic to the scientific:

I appreciate art, and have a passion for music. However this is done for my pleasure and outside medicine. I have no desire to bring the two together, I want them to be distinct. This feels as if it has been the most anger-inducing, annoying piece of work I have done.

Maybe for such a person the arts are a sanctuary too precious to breach. There is also the 'common sense' view that everyone knows what it is to be ordinary:

I feel that exercises like this merely patronize students. We have all been patients, we are all human. We do not need to be taught how to be an ordinary person.

The creative act is, however, never ordinary. It is finding what is extraordinary in the ordinary. It is through relaxation of our habitual frameworks and the willingness to take risks that there is the possibility for the new to emerge:

In my struggle to come up with something that I thought would be acceptable. I realized that not everything needs to be so rigid and formalized ... Being creative is being intuitive and spontaneous, taking a step away from what you think will be accepted as right and what people might want or expect to hear.

The students' documentation of how they found the creative process implies that direct engagement with materials and consequent aesthetic challenges seem to trigger an additional layering of creative improvisation and imagination. For example, a detailed abstract graphic 'Spots of Patients' by Irorho Ejournah juxtaposes two images of the same pattern, using opposing colours as ways to represent how:

even though two people have the same condition they may present totally differently and the clinician will interact with both patients in different ways.

'The Sun Bather', a sand sculpture by Zoe Issaacson, presents a three-dimensional model dependent on the physicality of the medium and the location of the piece in a specific space and time.

The use of monochrome with hints of gold and distorted perspective in 'Vertigo' by Victoria Cordell draws us into the world of the patient:

I really enjoyed the creative process; it helped me express what she was experiencing in a more fluid, visual and emotional way as opposed to just writing down symptoms.

The assessment of creative work

Because our invitation to be creative is also a mandatory part of the undergraduate course, we have had to develop ways of assessing it. In all contexts at Bristol, students receive written feedback on their creative work from tutors, all of whom are clinicians (mainly family physicians with a scattering of nurses, psychiatrists, and paediatricians). The idea of assessing artwork in a medical programme is peculiar, and so we have established training and written guidance. The main criterion is 'authenticity'; derisory or fore-shortened submissions (2-5 each year, out of 250) are asked to resubmit, and exceptional works (about 20 each year) are put forward for the website.

In judging authenticity and formulating written responses, tutors are asked to consider the extent to which students have engaged with a situation, using their senses in faithful observation and picking up on emotional content. Tutors consider how this engagement is reflected technically in their work. For writing tutors are prompted to consider, for example, metaphor, choice of narrator, plot devices, rhyme and metre. For visual art, tutors look again for metaphor and where the work sits on the spectrum between representationalism and abstraction. Though artistry is prized, many works are judged exceptional through the insight the student has demonstrated in their accompanying reflective account. Tutors also look out for (and make) inferences to future practice. What has the student learned from the exercise?

Tutors are given guidance on how to phrase their written comments – such feedback is rare, precious and, where students have opened up about themselves, important to handle with sensitivity. Instead of making judgements, tutors are encouraged to respond through enquiry. For instance, a tutor might write 'I wonder what your poem would have sounded like with freer use of rhyme?' or 'I couldn't help wondering what the doctor was feeling in all this – was there a way to bring him in?'. This creative work sits in the context of courses, for instance in Primary Care, and tutors are encouraged to offer comments that connect back to course teaching. This may enhance the relevance of the creative material in the students' eyes. For instance, the tutor might write 'isn't it interesting how with the right question the narrative spilled out – perhaps for the first time?'. Tutors are also encouraged to share their emotional responses to student work. An assessor might comment 'your painting made me sad remembering the loneliness of asylum seekers I have known'.

Conclusions and reflections

Jensen et al. (37) argues that medicine has become a practice without subjects: the persons of both doctor and patient having disappeared. Compulsory creativity is one possible response to this bleak position, aiming to bring the student into conscious relationship with the lived experience of the 'other' through the medium of the arts. Through such engagement, students augment their science-based studies with awareness of the complexity and uncertainty of real-world situations, loosening the conceptual frames that can get fossilised in the pursuit of propositional knowledge (fact). They are provided with an opportunity to improve their sensory and metaphorical acuity, think about the vagaries of the human condition and experience the intrinsic pleasure of being creative. Creativity is not a luxury, it is an essential component of the innovation on which the future of our health services depends. Despite its intrinsic benefits, creativity is not a quality we see championed by those who regulate medical education, such as the UK's General Medical Council. In Bristol we have developed a credible model for weaving creativity into an undergraduate curriculum and are encouraged by the individual and collective impact of this provision.

The fact that some of the creative work is compulsory is controversial. Surely the creative is not something that can be forced or performed to command? We agree but are also convinced that by making it compulsory we lead very many students to grapple with their creative side who otherwise wouldn't. Self-determination theory holds that people are most likely to learn well when they draw on intrinsic, autonomous, motivation (38). This has been shown to be the case in a wide variety of cultural contexts and is not thought to be merely a construct of liberal intellectualism with its focus on individual freedoms (39). In one sense this creative task is no different to the myriad of other tasks the student is expected to perform without, except in the most general sense, it being a personal choice. But it requires of them action of a type they were not expecting to encounter at medical school. A minority of students (both the artistically engaged and the artistically naïve) are irritated by the exercise. But, paradoxically, by giving voice to that which is typically unvoiced, it becomes for many a significant opportunity for autonomous expression.

It is important that compulsory elements are only occasional, accompanied by other opportunities for those who wish to develop further. When attempting to engage the artistically naïve, the framing of that invitation is crucial. We first introduce the idea to students soon after they have watched a live (peer-led) production of a short, hard-hitting play (Cancer Tales by Nell Dunn (31)). This awakens them to the idea that the arts might have something to offer. We stress the idea that we are not looking for artistry, but authenticity. Students, being assessment focused, fret that a lack of artistic skill will impair their grades. 'Free writing' is the quickest and most universal way of getting everyone doing something (nobody can say 'but I can't write!'). Assessment of creative work must, in every authentic case, be positive and affirming. All these elements serve to create an educational climate were students are more likely to take the risk of entering unfamiliar territory.

In addition to this mandatory creative work, we have developed a range of other elective options. We have or have had in Bristol, Student Selected Components (SSC) in the Creative Arts (34) and in Film Studies (40). One in Theatre Studies is planned for 2011. All these involve creative assignments, several of which feature at www. outofourheads.net. We also run a formal undergraduate degree programme in Medical Humanities, which takes an academic lens to the context (history), culture (literature), and critique (philosophy) of the medical enterprise. We have no evidence that student-artists are more commonly found in Medicine than in other sciencebased disciplines but are consistently amazed at how these undergraduates harness their latent artistic abilities to interpret the health predicaments they witness in their training. One of the delights of having followed the students' journeys through this material is to note that despite vehement initial resistance, a number become creatively 'persuaded'. Others need no such persuasion and from the outset are hungry to access and tease out their reservoirs of observations and aesthetic sensibilities.

We are starting to explore ways of using student artwork to enhance learning in our clinical teaching units, such as Psychiatry, Obstetrics, and Care of the Elderly. The www.outofourheads.net website can be searched by speciality and diagnoses we are developing guidance notes to allow organisers to draw on these resources in teaching sessions. For instance, the work 'termination', which naïvely depicts the plight of a woman who has been coerced by her ex-partner to have an abortion, could be used in Gynaecology tutorials discussing consent to this procedure. Artwork deployed in this fashion has face-validity for students who know that it has been created by one of their peers in the same settings which they are then encountering.

Future research could look at whether such creative engagement impacts on professional behaviour. For example, does such engagement help develop greater reflective capacity or the ability to engage with others' stories and perspectives? How might such developments affect doctor self-care and the ability to develop a therapeutic alliance? There are perplexing questions to be explored regarding the links between burnout and the lack of emotional intelligence and burnout resulting from being too empathic to survive in the current system.

Parker ponders 'Is medicine a science or art? The obvious answer is that it is both – the real challenge is to find the right balance between them' (41). We propose that offering students the opportunity to directly experience their creative potential in the undergraduate years is one way of foregrounding the art of medicine in a

science-dominated curriculum. Such experience, we believe, could enhance them as bedside clinicians and also as scientific and organisational innovators. Opting for 'compulsory creativity' would seem contrary to the spirit of the arts but seems to be a useful catalyst in this context. The last word goes to student Richard Igwe. You can read and listen here to his conclusions in a rap on a young single mother with undiagnosed postnatal depression, attending the family physician with a hand injury, sustained in a fit of rage:

Use your EQ not just your IQ Then your consultation will fly-true

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